



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Group Art Unit 3732

In re

Patent Application of

John C. Voudouris

Application No. 09/847,505

Confirmation No.: 8515

Filed: May 2, 2001

Examiner: Ralph A. Lewis

“ORTHODONTIC BRACKET”

I, Kate Sturdevant, hereby certify that this correspondence is being deposited with the US Postal Service as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date of my signature.

Kate Sturdevant
Signature
July 26, 2005
Date of Signature

APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Appeal Brief is being filed in support of a Notice of Appeal that was filed on April 11, 2005 in connection with the above-referenced application.

- I. **Real party in interest.** Orthoarm, Inc. is the assignee of the present application.
- II. **Related appeals and interferences.** There are no related appeals or interferences.
- III. **Status of claims.** Claims 1-40 and 58 are canceled, claims 41-57 and 59 are rejected and are being appealed.

A. **Status of amendments**

Applicant submitted amendments to claims 41 and 52, but those amendments were not entered by the Examiner.

B. *Summary of claimed subject matter*

Referring to Figs. 6-11, claims 41-47 are directed to an orthodontic bracket comprising a body (112) defining an archwire slot (120) (see page 16, lines 9-12). Tie wings (116) are coupled to the body and define a space therebetween (page 15, line 32 – page 16, line 2). The tie wings form a labial surface having a notch (150) formed therein (see page 17, lines 13-14). A locking shutter (132) has a stem (134) positioned in the space between the tie wings and is movable between an open position where access to the archwire slot is permitted and a closed position where access to the archwire slot is inhibited (see page 16, lines 22-25).

Claims 48-53 are directed to an orthodontic bracket comprising a body (112) defining an archwire slot (120) (see page 16, lines 9-12). Tie wings (116) are coupled to the body and define a space therebetween (page 15, line 32 – page 16, line 2). A locking shutter (132) has a stem (134) positioned in the space between the tie wings and is movable between an open position where access to the archwire slot is permitted and a closed position where access to the archwire slot is inhibited (see page 16, lines 22-25). The shutter includes an end (142) that is positioned in the archwire slot when the shutter is in the closed position, and the end includes a labial surface that is concave about an axis that is parallel to a mesio-distal axis (see page 17, line 6).

Claim 54-57 and 59 are directed to an orthodontic bracket comprising a body (112) defining an archwire slot (120) having a notch (124,126) (see page 16, lines 9-15). Tie wings (116) are coupled to the body and define a space therebetween (page 15, line 32 – page 16, line 2). A locking shutter (132) has a stem (134) positioned in the space between the tie wings and is movable between an open position where access to the archwire slot is permitted and a closed position where access to the archwire slot is inhibited (see page 16, lines 22-25). The shutter includes an end (142) that is positioned in the notch when the shutter is in the closed position.

IV. **Grounds of rejection to be reviewed on appeal**

A. 35 USC §112, 2nd paragraph – In claim 52, the Examiner contends that it is unclear how the shutter “end” relates to that already set forth in the parent claim 48.

B. Objection to Specification – In claim 48, the Examiner contends that the phrase “mesio-distal axis” is not defined in the specification.

C. Obviousness-type Double Patenting Rejection – The Examiner has rejected claims 41-57 and 59 as being unpatentable over:

1. claims 1-13 of US 6,257,883;
2. claims 1-22 of US 5,913,680; and
3. claims 1-15 of US 5,474,445.

D. 35 USC §102 – The Examiner has rejected claims 41-57 and 59 based on Rosenberg (US 4,634,662)

V. **Argument**

A. 35 USC §112, 2nd paragraph

Claim 52 is rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Applicant previously attempted to satisfy the Examiner’s concern by correcting the minor antecedent basis problem in claim 52, but the Examiner inexplicably refused entry of the amendment. More specifically, the applicant attempted to amend claim 52 as follows:

52. (proposed) An orthodontic bracket as claimed in claim 48, wherein the archwire slot includes a notch, and wherein the end of the shutter ~~includes an end that~~ is positioned in the notch when the shutter is in the closed position.

Application respectfully requests entry of this previously-submitted amendment.

B. Objection to Specification

The specification is objected to for failing to provide proper antecedent basis for the “mesio-distal axis” set forth in claim 48. Applicant respectfully requests that this objection be withdrawn.

In the specification, Applicant teaches that “[A]n archwire slot 120 extends mesiodistally across the body 112 and between the gingival and occlusal tie wings located at opposed mesial and distal sides of the body and opens labially to receive an archwire 122.” Further, at least Figures 6-10 illustrate an archwire slot that extends between the mesial and distal sides of the bracket body. Therefore, the specification implicitly defines a “mesio-distal axis” as an axis that extends between opposed mesial and distal sides of the bracket body (i.e., mesiodistally), such as along the axis that the archwire slot extends. On this basis, is it respectfully submitted that the phrase “mesio-distal axis” is adequately supported by the specification, and withdrawal of the objection is respectfully requested.

It is also noted that one skilled in the art fully understands the phrase mesio-distal to mean a line extending in the mesial and distal directions. Accordingly, on this basis also, withdrawal of the objection to the specification is respectfully requested.

C. Obviousness-Type Double Patenting Rejections

Claims 41-57 and 59 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 of U.S. Patent No. 6,257,883 (the ‘883 Patent), claims 1-22 of U.S. Patent No. 5,913,680 (the ‘680 Patent), and claims 1-15 of U.S. Patent No. 5,474,445 (the ‘445 Patent).

In determining whether a nonstatutory basis exists for a double patenting rejection, it must be determined whether any claim in the application defines an invention that is merely an obvious variation of an invention claimed in the reference. See MPEP § 804. The analysis used in an obviousness-type double patenting rejection parallels the guidelines for analysis of a 35 U.S.C. § 103 obviousness determination. *In re Braat*, 937 F.2d 589, 19 USPQ2d 1289 (Fed. Cir. 1991). According to the MPEP, § 804 II.B.1, any obviousness-type double patenting rejection should make two things clear. First, the rejection should make clear the differences between the inventions defined by the conflicting claims, i.e. a claim-to-claim comparison between the reference patent and the pending application. The Examiner

has provided no such claim-to-claim comparison. Second, the rejection should make clear the reasons why a person of ordinary skill in the art would conclude that the invention defined in the claim at issue is an obvious variation of the invention defined in a claim in the patent. It is respectfully submitted that the Examiner has not met this prima facie burden.

The Office Action does not provide a factual basis as to why one of ordinary skill in the art would conclude that the inventions defined in at least independent claims 41, 48 and 54 are obvious variants. Namely, no factual basis was given as to why orthodontic brackets including the following features are obvious variants of the claimed inventions to one of ordinary skill in the art.

- An orthodontic bracket including a locking shutter positioned between the tie wings and the tie wings forming a labial surface with a notch formed therein, as recited in independent claim 41.
- An orthodontic bracket including a locking shutter positioned between the tie wings with the end of the locking shutter positioned in the archwire slot when the shutter is closed and the end of the locking shutter including a labial surface that is concave about a mesio-distal axis, as recited in independent claim 48.
- An orthodontic bracket including a locking shutter positioned between the tie wings with the end of the locking shutter positioned in a notch of the archwire slot when the shutter is closed, as recited in independent claim 54.

Because no factual basis was given for why a person of ordinary skill in the art would conclude that the invention defined in the claims at issue are obvious variations of the invention defined in a claim of the cited patents, it is respectfully submitted that claims 41-57 and 59 of the present application are not obvious variants of claims 1-13 of the '883 Patent, claims 1-22 of the '680 Patent, and claims 1-15 of the '445 Patent. Accordingly, withdrawal of the obviousness-type double patenting rejection is respectfully requested.

The following is a more detailed statement of Applicant's arguments in response to the double-patenting rejection, followed by a rebuttal of the Examiner's comments that were set forth in the final Office action.

1. The '883 Patent

The subject matter claimed in the '883 Patent relates to an "over the wing" embodiment of an orthodontic bracket and is shown by the embodiment in FIGS. 1-5 of the '883 Patent. The '883 Patent claims a bracket including a resilient locking shutter having one end pivotally engaged with a tie wing and an opposing end positioned in the archwire slot. The locking shutter is pivotable between an open position, where access to the archwire slot is permitted, and a closed position, where access to the archwire slot is inhibited. Claim 1 of the '883 Patent recites as prior art that in the open position, the locking shutter resiliently engages the tie wing. Claim 7 of the '883 Patent recites as prior art that the locking shutter slides along a labial surface of a tie wing when in a position between the open position and the closed position. The subject matter claimed by the '883 Patent is considered prior art in an obviousness-type double patenting analysis.

In the present application, all of Applicant's claims recite an orthodontic bracket having a locking shutter positioned between the tie wings, instead of "over the wing" as required by the '883 Patent. There is nothing in the claims of the '883 Patent that teaches or suggests the concept of a locking shutter positioned between the tie wings. For this reason alone, all of the present claims are patentably distinct from the claims of the '883 Patent.

Further, claim 41 of the present application is directed to a self-ligating bracket having a locking shutter positioned between the tie wings, wherein the bracket includes a labial surface having a notch. The invention is shown in at least FIGS. 6-11 of the present application. The invention of claim 41 is not obvious in view of the claims of the '883 Patent because claims 1-13 of the '883 Patent does not teach or suggest a locking shutter positioned between the tie wings with a labial surface having a notch.

Claim 48 of the present application is directed to a self-ligating bracket having an end of the locking shutter positioned in the archwire slot when the shutter is closed wherein the end of the locking shutter includes a labial surface that is concave about an axis that is parallel to a mesio-distal axis. This invention is shown in at least FIGS. 6-11 of the present application. The invention of claim 48 is not obvious in view of the claims of the '883 Patent because claims 1-13 of the '883 Patent does not teach or suggest a locking shutter positioned between the tie wing with the end of the locking shutter positioned in the archwire slot when

the shutter is closed or the end of the locking shutter including a labial surface that is concave about a mesio-distal axis.

Claim 54 of the present application is directed to a self-ligating bracket with an end of the locking shutter positioned in a notch in the archwire slot when the shutter is closed, which is shown in at least FIGS. 6-11 of the present application. The invention of claim 54 is not obvious in view of the claims of the '883 Patent because claims 1-13 of the '883 Patent do not teach or suggest a locking shutter positioned between the tie wing with the end of the locking shutter positioned in a notch in the archwire slot when the shutter is closed.

The above-referenced features are not taught or suggested by claims 1-13 of the '883 Patent, and the Examiner has not met the burden to support the PTO's position. More specifically, the claimed subject matter of the present invention is not an obvious variant of claims 1-13 of the '883 Patent. Therefore, it is respectfully submitted that claims 41-57 and 59 of the present application are not obvious variants of claims 1-13 of the '883 Patent, and withdrawal of the corresponding rejection is requested.

2. The '680 Patent

The subject matter claimed by the '680 Patent is considered prior art in an obviousness-type double patenting analysis. The subject matter of the '680 Patent relates to an orthodontic bracket including a pair of laterally spaced gingival tie wings and a pair of laterally spaced occlusal tie wings, with both the gingival and occlusal tie wings at opposed mesial and distal sides of the bracket body being separated by an interwing region of the body; an archwire slot extending mesiodistally across the body between the gingival and occlusal tie wings; and a locking shutter.

Independent claim 1 of the '680 Patent requires a biasing means in the form of a leaf spring secured to the locking shutter intermediate its ends for resiliently urging an archwire in the archwire slot. The leaf spring extends into the archwire slot and extends mesiodistally with respective mesial and distal formations thereon extending in the archwire slot when the shutter is in a closed position. An embodiment of claim 1 of the '680 Patent is shown in FIGS. 42-45 of the '680 Patent.

Independent claims 8 and 20-22 of the '680 Patent require the locking shutter be pivotal about at least one pivot pin. Independent claim 8 requires that the locking shutter

include a single loop at one end thereof to surround the pivot pin; independent claim 20 requires a lubricating or sealing agent carried by one or more of the body, locking shutter and archwire; independent claim 21 requires a stop on the body and a wedge on the locking shutter to abut the stop when the locking shutter is compressed and moved to the closed position to lock the shutter in the closed position; and independent claim 22 requires the locking shutter include a spring loaded piston accommodated by a tie wing and extending into the interwing region to lock the shutter in the closed position.

In the present application, all of Applicant's claims recite an orthodontic bracket having a locking shutter positioned between the tie wings. There is nothing in the claims of the '680 Patent that teaches or suggests the concept of a locking shutter positioned between the tie wings. For this reason alone, all of the present claims are patentably distinct from the claims of the '680 Patent.

Further, claim 41 of the present application is directed to a self-ligating bracket having a locking shutter positioned between the tie wings, wherein the bracket includes a labial surface having a notch. The invention is shown in at least FIGS. 6-11 of the present application. The invention of claim 41 is not obvious in view of the claims of the '680 Patent because the claims of the '680 Patent does not teach or suggest a locking shutter positioned between the tie wings with a labial surface having a notch.

Claim 48 of the present application is directed to a self-ligating bracket having an end of the locking shutter positioned in the archwire slot when the shutter is closed wherein the end of the locking shutter includes a labial surface that is concave about an axis that is parallel to a mesio-distal axis. This invention is shown in at least FIGS. 6-11 of the present application. The invention of claim 48 is not obvious in view of the claims of the '680 Patent because the claims of the '680 Patent does not teach or suggest a locking shutter positioned between the tie wing with the end of the locking shutter positioned in the archwire slot when the shutter is closed or the end of the locking shutter including a labial surface that is concave about a mesio-distal axis.

Claim 54 of the present application is directed to a self-ligating bracket with an end of the locking shutter positioned in a notch in the archwire slot when the shutter is closed, which is shown in at least FIGS. 6-11 of the present application. The invention of claim 54 is not obvious in view of the claims of the '680 Patent because the claims of the '680 Patent do not

teach or suggest a locking shutter positioned between the tie wing with the end of the locking shutter positioned in a notch in the archwire slot when the shutter is closed.

The above-referenced features are not taught or suggested by claims 1-22 of the '680 Patent, and the Examiner has not met the burden to support the PTO's position. More specifically, the claimed subject matter of the present invention is not an obvious variant of claims 1-22 of the '680 Patent. Therefore, it is respectfully submitted that claims 41-57 and 59 of the present application are not obvious variants of claims 1-22 of the '680 Patent, and withdrawal of the corresponding rejection is required.

3. The '445 Patent

The subject matter claimed by the '445 Patent is considered prior art in an obviousness-type double patenting analysis. The subject matter of claims 1-15 of the '445 Patent relates to a self-engaging orthodontic bracket including a pair of gingival and occlusal tie wings extending buccal-labially from the lingual surface of the bracket body, a central mesiodistally extending labially opening slot for receiving an archwire, a mesiodistally extending lingual locking surface intermediate one of the pairs of tie wings, and a mesiodistally extending axis means intermediate the other pair of tie wings. The bracket further comprises a pivotal latch having a catch means at one end for locking engagement with the locking surface and a figure-eight shaped pivot means at an opposite end. The pivot means defines first and second channels for pivotally receiving the axis means such that the latch is pivotal between an open position and a closed position. In the open position the first channel receives the axis means. In the closed position the second channel receives the axis means and the catch means securely engages the locking surface.

In the present application, all of Applicant's claims recite an orthodontic bracket having a locking shutter positioned between the tie wings. There is nothing in the claims of the '445 Patent that teaches or suggests the concept of a locking shutter positioned between the tie wings. For this reason alone, all of the present claims are patentably distinct from the claims of the '445 Patent.

Further, claim 41 of the present application is directed to a self-ligating bracket having a locking shutter positioned between the tie wings, wherein the bracket includes a labial surface having a notch. The invention is shown in at least FIGS. 6-11 of the present

application. The invention of claim 41 is not obvious in view of the claims of the '445 Patent because claims 1-15 of the '445 Patent does not teach or suggest a locking shutter positioned between the tie wings with a labial surface having a notch.

Claim 48 of the present application is directed to a self-ligating bracket having an end of the locking shutter positioned in the archwire slot when the shutter is closed wherein the end of the locking shutter includes a labial surface that is concave about an axis that is parallel to a mesio-distal axis. This invention is shown in at least FIGS. 6-11 of the present application. The invention of claim 48 is not obvious in view of the claims of the '445 Patent because claims 1-15 of the '445 Patent does not teach or suggest a locking shutter positioned between the tie wing with the end of the locking shutter positioned in the archwire slot when the shutter is closed or the end of the locking shutter including a labial surface that is concave about a mesio-distal axis.

Claim 54 of the present application is directed to a self-ligating bracket with an end of the locking shutter positioned in a notch in the archwire slot when the shutter is closed, which is shown in at least FIGS. 6-11 of the present application. The invention of claim 54 is not obvious in view of the claims of the '445 Patent because claims 1-15 of the '445 Patent do not teach or suggest a locking shutter positioned between the tie wing with the end of the locking shutter positioned in a notch in the archwire slot when the shutter is closed.

The subject matter of claims 1-15 of the '445 Patent do not teach or suggest the claimed subject matter of the present invention, and the Examiner has not met the burden to support the PTO's position. Therefore, it is respectfully submitted that claims 41-57 and 59 of the present application are not obvious variants of claims 1-15 of the '445 Patent, and withdrawal of the corresponding rejection is required.

D. 35 U.S.C. § 102(b) Rejections

Claims 41-57 and 59 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,634,662 (Rosenberg). Applicant takes note of Figure 5 from Rosenberg that is reproduced in the final Office action.

1. Claims 41-47

Claims 41-47 require at least two tie wings coupled to a body of a self-ligating bracket and defining a space therebetween. The tie wings form a labial surface having a notch formed therein. One example of a notch is shown in FIG. 7 and is identified by reference numeral 150. Rosenberg does not teach, suggest or disclose a body and tie wings collectively forming a labial surface having a notch formed therein. The Examiner identifies a “notch” in Figure 5 of Rosenberg that is actually a space between the tie wings 2. Claim 41 recites a space defined between at least two tie wings and a notch formed in the labial surface of the tie wings. The tie wings 2 of Rosenberg form a labial surface that is flat. As seen in Figure 5 of Rosenberg, no notch is formed in the labial surface of the Rosenberg tie wings 2. Therefore, Rosenberg cannot anticipate claims 41-47 of the present application, and allowance of those claims is respectfully requested.

2. Claims 48-53

Claims 48-53 require a self-ligating bracket having a locking shutter positioned between the tie wings, wherein the end of the locking shutter is positioned in the archwire slot when the shutter is closed, and further wherein the end of the locking shutter includes a labial surface that is concave about an axis that is parallel to a mesio-distal axis. As discussed above, support for a “mesio-distal axis” is found in the specification of the present application and is supported by FIGS. 6-11 of the present application. Mesial and distal are terms of art in the field of orthodontics. Any orthodontist would understand that “mesio-distal axis” refers to an axis that extends between the mesial and distal ends of a device.

The Examiner relies upon a Dentistry dictionary rather than an Orthodontic dictionary to allege the term “mesio-distal” has not been defined. Further, the Examiner relies upon a definition of “mesial,” but neglects to refer to a definition of “distal.” In *The American Heritage Stedman’s Medical Dictionary* (2002, 2001, 1995), cited at www.dictionary.com, “mesial” is defined as “situated toward the middle of the front of the jaw along the curve of the dental arch.” “Distal” is defined as “situated farthest from the middle and front of the jaw, as a tooth or tooth surface.” A reading of the specification, analysis of an Orthodontic

dictionary, or reference to a definition for both “mesial” and “distal” shows that “mesio-distal axis” is an axis that extends between the mesial and distal ends of a device, or jaw.

Rosenberg does not teach, suggest or disclose a locking shutter including an end positioned in the archwire slot when the shutter is in the closed position or the end including a labial surface that is concave about mesio-distal axis. Rosenberg discloses the lever 5 with springs 8, 8' attached to the end of the lever 5 seat the archwire 6 in the slot 7. The end of the lever 5 includes a labial surface that is linear. The springs 8, 8' include a labial surface that is concave about a gingival-occlusal axis, but the labial surface of the springs is not concave about a mesio-distal surface as required by claim 48. Therefore, Rosenberg cannot anticipate claims 48-53 of the present application, and allowance of those claims is respectfully requested.

3. Claims 54-57 and 59

Claims 54-57 and 59 are directed to a self-ligating bracket having a locking shutter positioned between the tie wings, wherein an end of the locking shutter is positioned in a notch in the archwire slot when the shutter is closed. Rosenberg does not teach, suggest or disclose an archwire slot including a notch, or a shutter including an end positioned in the notch when the shutter is in the closed position. The lever 5 of Rosenberg is movable to allow access to the archwire 6 and to prevent access to and hold the archwire 6 in place. As seen in FIG. 2 of Rosenberg, the slot 7 does not include a notch, nor is the lever 5 or the springs 8, 8' positioned within a notch formed in the slot 7. Rather, the lever 5 is spaced apart from the archwire 6 and an inner perimeter of slot 7. Therefore, Rosenberg cannot anticipate claims 54-57 and 59 of the present application, and allowance of those claims is respectfully requested.

VI. **Conclusion**

In view of the arguments and amendments presented herein, Applicant believes that the claims are in condition for allowance and respectfully requests a favorable decision from the Board. The undersigned is available for telephone conference.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Kevin P. Moran", written in a cursive style.

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Claims Appendix

1-40. (Canceled)

41. (Previously presented) An orthodontic bracket comprising:
a body including a lingual surface for attachment to a tooth and having an archwire slot;
at least two tie wings coupled to the body and defining a space therebetween, the body and the tie wings collectively forming a labial surface having a notch formed therein; and
a locking shutter having a stem positioned in the space between the tie wings and movable between an open position where access to the archwire slot is permitted and a closed position where access to the archwire slot is inhibited.
42. (Previously presented) An orthodontic bracket as claimed in claim 41, wherein the tie wings are gingival tie wings.
43. (Previously Presented) An orthodontic bracket as claimed in claim 42, further comprising at least two occlusal tie wings.
44. (Previously Presented) An orthodontic bracket as claimed in claim 41, wherein the shutter further includes an arm coupled to the stem, wherein the arm is wider than the stem to form a T-shaped locking shutter, and wherein the arm is positioned in the archwire slot when the locking shutter is in the closed position.
45. (Previously presented) An orthodontic bracket as claimed in claim 44, wherein the arm includes an end having a labial surface that is concave.
46. (Previously presented) An orthodontic bracket as claimed in claim 41, wherein the archwire slot includes a second notch, and wherein the shutter includes an end that is positioned in the second notch when the shutter is in the closed position.

47. (Previously Presented) An orthodontic bracket as claimed in claim 41, wherein the locking shutter is pivotally coupled to the body.

48. (Previously presented) An orthodontic bracket comprising:

a body including a lingual surface for attachment to a tooth and having an archwire slot;

at least two tie wings coupled to the body and defining a space therebetween; and

a locking shutter having a stem positioned in the space between the tie wings and movable between an open position where access to the archwire slot is permitted and a closed position where access to the archwire slot is inhibited, wherein the shutter includes an end that is positioned in the archwire slot when the shutter is in the closed position, the end including a labial surface that is concave about an axis that is parallel to a mesio-distal axis.

49. (Previously presented) An orthodontic bracket as claimed in claim 48, wherein the tie wings are gingival tie wings.

50. (Previously Presented) An orthodontic bracket as claimed in claim 49, further comprising at least two occlusal tie wings.

51. (Previously Presented) An orthodontic bracket as claimed in claim 48, wherein the shutter further includes an arm coupled to the stem, wherein the arm is wider than the stem to form a T-shaped locking shutter, and wherein the arm is positioned in the archwire slot when the locking shutter is in the closed position.

52. (Previously presented) An orthodontic bracket as claimed in claim 48, wherein the archwire slot includes a notch, and wherein the shutter includes an end that is positioned in the notch when the shutter is in the closed position.

53. (Previously Presented) An orthodontic bracket as claimed in claim 48, wherein the locking shutter is pivotally coupled to the body.

54. (Previously Presented) An orthodontic bracket comprising:
a body including a lingual surface for attachment to a tooth and having an archwire slot including a notch;
at least two tie wings coupled to the body and defining a space therebetween; and
a locking shutter having a stem positioned in the space between the tie wings and movable between an open position where access to the archwire slot is permitted and a closed position where access to the archwire slot is inhibited, wherein the shutter includes an end that is positioned in the notch when the shutter is in the closed position.
55. (Previously presented) An orthodontic bracket as claimed in claim 54, wherein the tie wings are gingival tie wings.
56. (Previously Presented) An orthodontic bracket as claimed in claim 55, further comprising at least two occlusal tie wings.
57. (Previously Presented) An orthodontic bracket as claimed in claim 54, wherein the shutter further includes an arm coupled to the stem, wherein the arm is wider than the stem to form a T-shaped locking shutter, and wherein the arm is positioned in the archwire slot when the locking shutter is in the closed position.
58. (Canceled)
59. (Previously Presented) An orthodontic bracket as claimed in claim 54, wherein the locking shutter is pivotally coupled to the body.